

REC'D

JUN 26 1985

*Special* **HARDWARE** *Issue*

MAY JUNE

No. 14

\$2.00

**T-S Horizons****2068 Memory Expansion****Zebra Tablet Review****Surge Suppressor Project****T-S 1000 Keyboard Add-On****plus****QL Report****Machine Code Graphics Loop****Portuguese 2068 Arrives**

At last a TS2068 with Disk Drives! Shown in this photo is a TIMEX 2068 equipped with the TIMEX Portugal FDD System.

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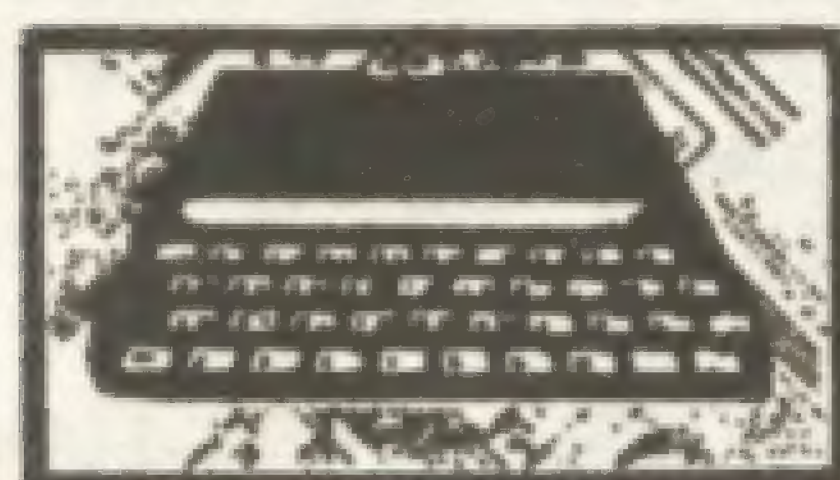


May/June 85

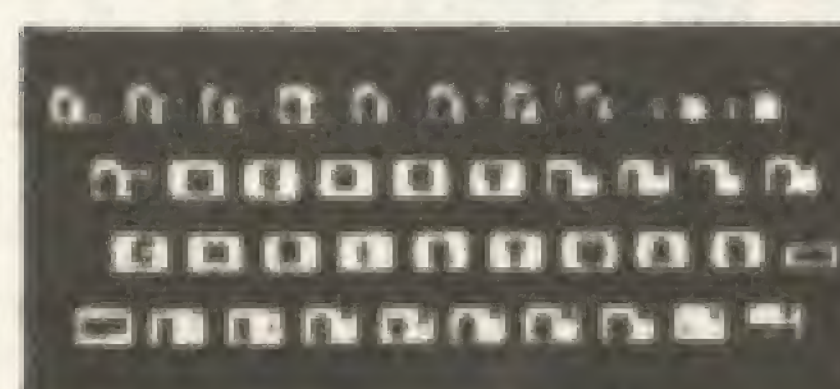
# T-S Horizons

No. 14

ENTER	4	Machine Code Graphics Loop	19
Reader INPUT	6	by Bernard Bush	
EDITORial by Bill Ferrebee	8	Zebra Graphics Tablet Review	21
"In Sync#3" by John Bell	9	TS 2068 Word Processor Evaluation	22
Build your own Surge Suppressor		by Bill Ferrebee (Pt.3)	
USR-User group Service Report	10	Spectrum Reviews by Doug Gangi	24
TS Help & Information - J. Marion	12	Beachhead and Dangermouse	
Surplus Keyboard Adaptation		Software "Home Pack"	26
Cassette Notes by Tim Carver	13	Reviewed by Tex Faucette	
The QL Report from Curry Computer	14	Reviews for the Non-Programmer	29
Adapting the ZX81 Rampack	16	by Art Gindin	
to the TS2068 by N. Pashtoon and P. Donnelly		TS News	30



#1 Nov'83 Creating/Saving Files (Johnson), Repeat Key and Uninterruptible Power Supply Projects, Numerical Analysis, Load/Save Problems, Reviews, and more!



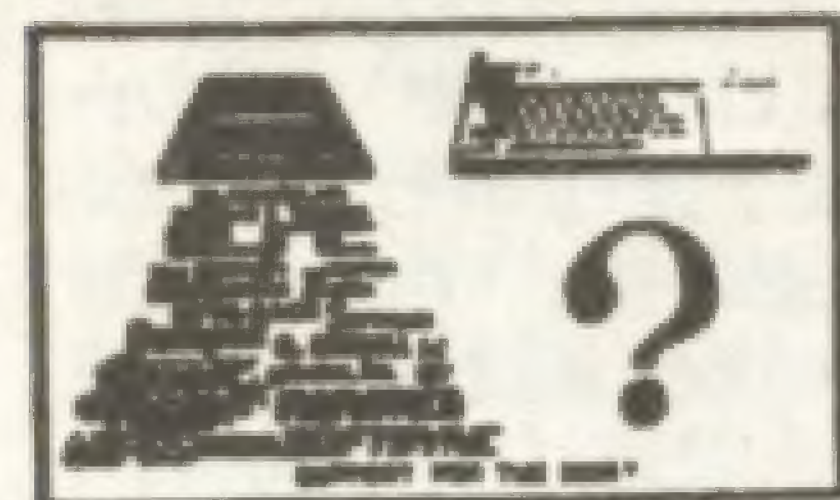
#2 Dec'83 Matrix/Cursor Input (Johnson), User-Friendliness, Reset Switch Project, Memory Reduction, Rule of 78, ZX Cash Register, Graphics Tutorial, etc!



#3 Jan/Feb'84 Two Animation Programs, Simple Loading Aid Proj. (Young), Tape File Protection, Differential Equations, Ham Radio Reviews, User Group News & More!



#4 March '84 The Death of TCC, TS1000 Bank Switching (Hunter), Error Recovery (Johnson), Edge Connector Schem., Simpson Rule, Reviews, Reader Input, & more!



#5 April/May'84 "WORM" Word Processor (Young) Pt.1, Least Squares, TS1000 Graphics Program, TS2068 Future?, Bank Switching Pt. 2, Program Tips, Reviews, and more!

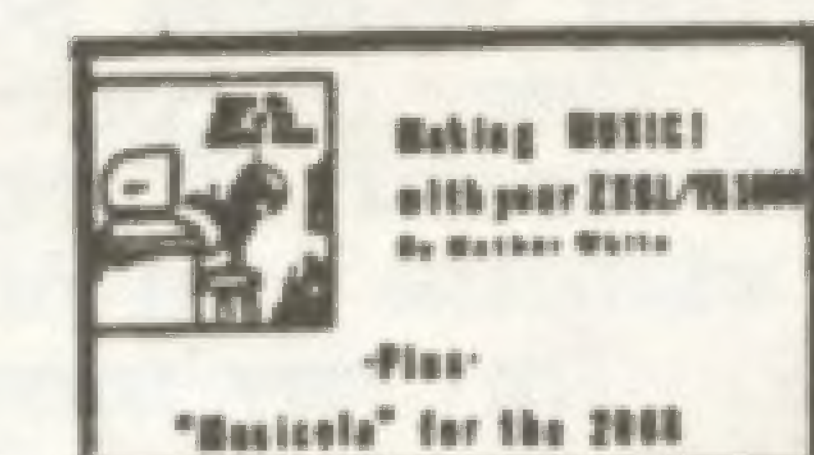
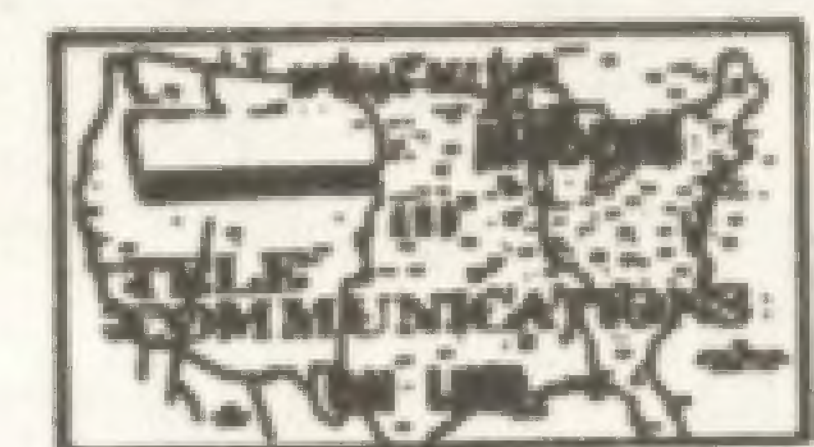
#11 Jan'85-40 Pages, Lower Case on the TS 1000, 2068 Word Processor Eval.-Pt.1, Bar Graph, Experimenting with Byte Back Modem, Bank Switching-7, INDEX of issues 1 to 10, Reviews, and more.

#12 Feb/Mar 85 - 2068 Mass Storage, Software from England, Program Tips for TS1000, 2068 W.P. Eval.-Pt.2, Bank Switching Concluded, MTERM Patches, 2068 Tutorial, Programs.

#6 June'84 Ts1000 As Church Aid, Interfacing Books, Num. Analysis, Hardware Tips, "WORM"-2, Switching-3, Good News from EA Brown, Six Reviews, and more!



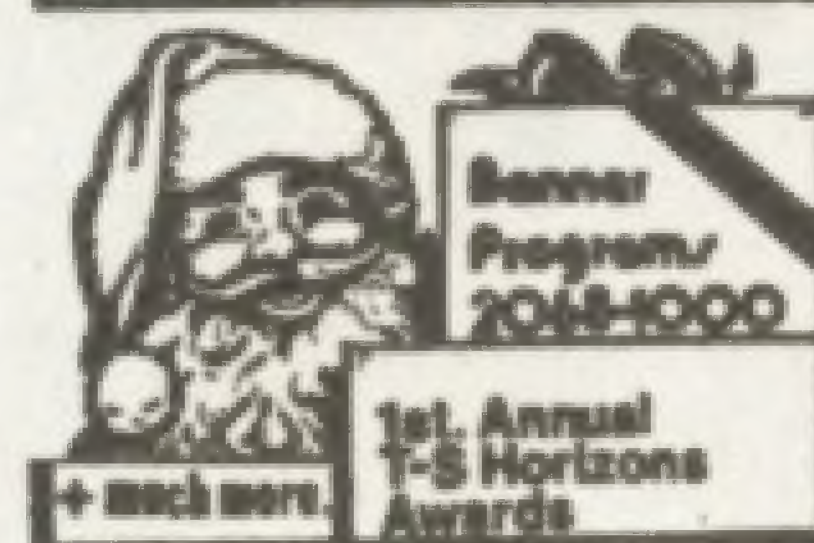
#7 July/Aug'84, Telecommunications Issue, 2068 Program Tips, How A Compiler Works, Rotating Globe, Byte-Back Modem, TC for Beginner, Switching-4, WORM-3, S.I.N., etc.



#8 Sept'84 TS 1000 Music Program, 2068 Plotter, 2068 Character Set (Young), Address Program, Nine Reviews, Telecommunications Column, TS News, and more!



#9 Oct/Nov '84 - ANNIVERSARY ISSUE, TS 2068 Spirograph, Dave Higgenbottom interview, FORTH for T/S Computers, Spectrum section, Bank Switching-5, Telecommunications, Reviews, etc.



#10 Dec '84 - 40 PAGES, Making Backups of 2068 Software, Banner Programs, QL, TS1000 Program Tips, Christmas program, RS100vs.TS1000, MTERM/Horizon Awards, Switching-6, TSUGs, New Column, more!

#13 April 84 - Complete 2068 W.P. listing, TS1000 Simulated READ-DATA, Worm Enhancements, User Defined Graphics for 2068, "Try These", Changing "Fonts"-2068, Reviews.

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# ENTER

Dear Friends,

I hope you can excuse us if this ENTER column gets a little personal, but this issue of T-S Horizons is being dedicated to Jeremy Charles Duncan. Jeremy was born earlier this morning (May 23) at 8:43. He was 8 lb 4 oz and 21 inches long. His mother is recovering very well for having gone through a Caesarean section and his father (yours truly) is recovering well for having witnessed a Caesarean birth. Daniel, Jeremy's 2 1/2 year old brother is waiting at home patiently, wondering where mommy is and exactly what a "baby brother" is, and TS Horizons is late again.

## New Subscribers

For the sake of any new subscribers who have not heard, T-S Horizons is intended to be monthly but occasionally it comes out late with a 2-month cover date (e.g. May/June). Rest assured that your subscription is for 12 issues, not 12 months, and that we really do try to be on time. Now that we've gotten the personal and the obligatory out of the way let's get down to business.

## The Portuguese 2068:

### Hopeful Hybrid or Mutant Misfit

Have you heard the latest? Timex is back. So is the 2068. Well not exactly. Timex of Portugal has been marketing their version of the 2068 in Europe and is toying with the idea of mass merchandising in the U.S. That may seem like an odd turn of events since Timex (U.S.) decided to give up on the computer market. But read on.



Jeremy Charles Duncan.

As I understand it the Portuguese 2068 (or TC 2068) is internally similar to the American 2068 (TS 2068) with a Spectrum rear edge connector. The TC2068 is sold with a Spectrum emulator (which will work on the TC but reportedly not on the TS). Now the Spectrum is the most popular computer in Great Britain, which has the highest per capita level of home computers in the world. The Spectrum is also the most popular computer in Spain and several other countries. So T. of P. has a product that can run Spectrum programs and use Spectrum peripherals. I wonder how Sinclair likes the competition from its own offspring.

Can the TC 2068 make it in the U.S. ? First of all we understand that it is having serious problems with the F.C.C. (Currently limited quantities are being sold as evaluation units). But beyond that two questions must be answered. 1.) Does the existing Timex market need the computer? Most mail order dealers (Zebra, Sunset, Brown, etc.) feel they have adequate supplies of TS 2068's currently. Some are reluctant to sell the TC 2068 for that reason. 2) Can a new market for the 2068 be created? Frankly we doubt it. It may be that Timex (U.S.) has already "poisoned" the market for good.

Even if they had the greatest reputation, I doubt that a new \$159 to \$200 64K computer can make it in the U.S. market. I recently saw an Atari 800 in Children's Palace for \$99. One option is to implement some of Dave Higgenbottom's ideas and make it a 128K machine, but that probably won't happen.

Apart from the marketing of the machine, most technically inclined types who have seen it seem to feel it's a nice machine. Nazir Pashtoon and Paul Donnelly have reviewed it favorably and I consider their opinion to be very dependable. But you should know that some others are less enthusiastic. One reliable source called it "a real mutant. 2068 guts. Spectrum bus. You need an emulator which was not included with mine although I paid for it. You can't hook up the (Sinclair) microdrives directly... This is a very quick evaluation but (for \$400 or so total cost computer, drives, and connectors)... I'll take the QL anyway." So the verdict is mixed for the TC 2068.

However, unlike the TC 2068, several vendors are carrying and are very excited about the disk drives being sold by T. of P. These can be adapted to the U.S. 2068. The technical information printed here was provided by Zebra Systems and Sunset Electronics. The presidents of both companies in a joint venture went to Europe recently to look into the new hardware. We hope to have a report from them for the next issue. See ads in this 4 issue for who's selling what?



## Impending Cancellation of SYNTAX

I suppose it's the end of an era of sorts. Kirt Olson of Syntax called a couple of weeks ago to inform us that Syntax is no longer taking new subscriptions. They will publish enough new issues to complete all current subscriptions and any and all back issues are available. Any 12 continuous issues may be purchased for \$48, their regular annual subscription rate.

Syntax was the original American publication for Sinclair Computers. Those of us that originally ordered ZX80's and ZX81's through the mail received a free sample copy of Syntax. Since then the price has gone up considerably.

At the height of success of TS1000/ZX81 Syntax tried to start a glossy magazine called Syntax Quarterly. A nice idea but going up against both Sync and Timex Sinclair User with a higher priced quarterly didn't seem to work out. After three issues SQ was cancelled. At one point Syntax had 10000 subscribers. I hate to see Syntax go even though a few users were willing to spend \$48 a year for it. I guess that makes TS Horizons the oldest surviving TS specific publication around. I think I'd better be going now. I hear a baby crying.

Yours truly,

Rick Duncan

TSI

# FDD SPECIFICATIONS

## Floppy Disk Drive Controller (TFC-1)

*Processor:* Z80A at 4 Mhz

*Memory:* 2K Boot ROM

16K RAM - expandable to 64K (CP/M expansion)

*FDC:* Western Digital FDC 1770

*Capacity:* Controls up to 4 disk drives

*Communications:*

2 fully programable RS232C channels

1 high-speed link to the Spectrum interface

*Software:*

The T.O.S. System is a patch into Sinclair BASIC and all commands are issued to the controller by suffixing an \* to command. It allows full file handling of data, enabling database programs to be written, a task which is not normally performed by the Spectrum.

The 20K T.O.S. disk operating system supports a tree-like directory structure with named diskettes, named files (8 characters name + 3 characters suffix) with attributes (protection and catalogue), pathnames, wildcard file selection and up to 16 file or serial channels open simultaneously. ASCII and code files, CP/M compatible.

Full serial channels support.

Full range of standard system calls.

Backup, Losys, Lprint and Dump utilities supplied.

## Disk Drives (TDD)

3" Disk Drives

### SINGLE SIDED 40 TRACK (TDD-1)

Unformatted capacity	250K/side
Formatted capacity	160K/side
User files capacity	140K/side

### DOUBLE SIDED 80 TRACK (TDD-2)

Unformatted capacity	1M
Formatted capacity	640K
User files capacity	620K

## Spectrum Interface (TSI-1)

*Memory:* 4K ROM - BASIC expansion  
1K RAM

*High speed link*

*Software:* New commands

CAT\*, LOAD\*, SAVE\*, OPEN\*, PRINT\*, INPUT\*, LIST\*,  
RESTORE\*, MERGE\*, GOTO\*, GOSUB\*, DRAW\*, CLOSE\*,  
FORMAT\*, ERASE\*, LET\*, ATTR\*, MOVE\*.

*Auto-Run:* Automatic run of a program after a reset.

*Error trapping:* Disk error messages and codes processed from BASIC

*Compatibility:* No single byte of memory is used from the Spectrum! The interface is completely transparent to the Spectrum. Virtually all Spectrum programs run without modifications (including machine code programs).

## Power Supply (TPS-1)

*Power requirements:* 220/240 Volts AC, 50/60 Hz

*Power consumption:* Máx. 14 Watts (1 controller + 1 interface + 2 drives)

*Output voltages:* +5V, +12V

## Mechanical Characteristics

*Dimensions:*

For FDD controller, disk driver, power supply (each)

Height: 67 mm (2.50")

Width: 122 mm (4.75")

Depth: 157 mm (6.25")

*Weight:* FDD controller 550 gr.

Disk Drive 800 gr.

Power Supply 1.350 gr.

*Dimensions:* Spectrum interface

Height: 30 mm (1.20")

Width: 95 mm (3.75")

Depth: 100 mm (4.00")

*Weight:* Spectrum interface 125 gr.

*Colour:* Black Spectrum-case finishing

DISK DRIVE CABLES AND POWER SUPPLY LEAD ARE INCLUDED.



## FROM THE CLUTTERED DESK

Reader Input Plus Other Notes Of Interest

By Scott Duncan

Advertising/Circulation Manager

Well here it is late May and we finally have our 2068th subscriber. Congratulations to David G. Hansen of Madison, Wisconsin.

T-S Horizons has been in contact with User Groups throughout America and Canada and will soon be printing an updated list of groups with contact and newsletter information.

Dear Mr. Duncan,

I would like to know if there is a T/S 2068 users group in New York anywhere preferably in Yonkers (Westchester County). It would be nice if you can print it in next months issue so other New Yorkers can find out about the club. If there is none then someone should make one.

Pashko Mmaci, Yonkers, N.Y.

There is a group in New York. It has 100 members and a very good newsletter. Contact: Long Island Sinclair Timex Group, (L.I.S.T.) P.O. Box 438 Centerport, New York 11721-0438

Gentlemen:

Please send to me any information that you may have on manufacturers of disc drives for the Sinclair 2068 computer.

Thankyou, Raymond Roberts, New York, NY

Raymond, check in this issue for the ad from Zebra Systems and TSH issue no. 12. Be sure and tell them we sent you.

Gentlemen:

Is there a program to protect the TS2068 programs from being listed?

FAISAL EL-SHOVFY, New Iberia, La.

There is a line which you can add to your programs which will not only make them unlistable but un-breakable!

First line in program—10 ON ERR CONTINUE

When this line is inserted into a program and the program is run, there is no way to break out. If you hit BREAK, an error is created. The program will continue because of the inserted statement at the beginning of the program. (Thanks to John Marion for help with this.)

Dear Scott,

I have enjoyed my subscription to T/S Horizons. It is the only Timex publication I receive, though I have recieved information from others. Since my first issue, No. 7, I have gathered small bits of information that I have not seen in your magazine. You may like to pass it on to your subscribers.

1. There is a Timex Sinclair Sub-board on CompuServe. It is only because of Barry Carter that I know about it.
2. When using Smart II you can return from Basic with Print USR 54079 without losing your Macros or Phone Directory. Info is from Dave Rothman. (I have a problem in that when doing this, print outs to my 2040 look funny, this can be corrected by Print USR 54016 from Basic, but you loose your Macro's & Directory. You can now print the Buffer.)

I have had my Micro drive for 2 weeks now and here is some information to add to W. Pierson's hardware review.

1. My T/S 2068 is "Full Blown" with Micro Drive, Westridge 2050 Modem, T/S 2040 Printer, and AERCO Centronics Interface. My worry was would I be overloading the Buss and Power Supply. NO. With my Fluke Multimeter my maximum current pull is .45 Amps. The 2068 power supply is rated at 1.0, we have plenty of power to spare for that #2 Micro Drive add on.
2. Early information stated that only 9 files could be stored per Wafer Tape. No. As long as you do not exceed your tape capacity (85K max.) there is no limit of files.
3. Are the more popular 2068 programs adaptable to the Micro Drive? Yes, I have adapted VU-File, VU-Calc, Chess, Smart II, and Tasword 2 with few problems. Bill Ferrebee's HEADER program (TSH #10) helps alot. The only thing I haven't been able to do is save files from MSCRIPT. MSCRIPT files do not have a standard header.
4. To save a program such as "game" at file 1 would be: SAVE "@1,game", to load or verify it would look like VERIFY "@game" or LOAD "@game". No problem, right? RIGHT. But when saving A\$, then doing an auto verify A\$ WE HAVE A PROBLEM. Example: LET A\$=@1,game would SAVE "@1,game" then VERIFY "@1,game". WRONG. The fix is:  
1 LET A\$="@1,game"  
2 SAVE A\$  
3 LET A\$(3)="@"  
4 VERIFY A\$(3 TO )
5. If you want to turn your T/S 2068 into a CPM monster then the \$450.00 + disk drive system is for you. But if you want a fast, super reliable, data storage unit for \$200.00 you cannot beat the A & J Micro Drive.



"YOUR 2068 STORE"



**KNIGHTED COMPUTERS**  
707 Highland St.  
Fulton, N.Y. 13069

"YOUR 2068 STORE"

HARDWARE AND SOFTWARE FOR THE  
*NEW... CHECK THESE OUTSTANDING  
PROGRAMS*



Here's an action-packed arcade-style game based on a Second World War scenario. You are the gunner and bomb aimer whose task is to defend your plane against enemy attack and destroy the ground targets in 30 different missions. The rewards are high for the expert marksman, but beware, the going gets tougher on each new mission. One or two player game, with up to 4 levels of play. High speed graphics. Another fine program from Digital Integration - the folks that brought you FIGHTER PILOT.

(JOYSTICK AND KEYBOARD CONTROL) \$19.95

DEALER INQUIRES INVITED



### The Handicapper

\*\*\*

Use your TS2068 to improve your performance at the track! These fine programs for THOROUGHBREDS, HARNESS HORSES, and GREYHOUNDS combine the power of your TS2068 computer with the savvy of a veteran handicapper. Spend a few minutes entering data, and The Handicapper will rank the horses or dogs in each race. All the information is readily available from the Thoroughbred Racing form, Harness, or Greyhound Track Program. We even provide a diagram showing you where to get the data you need!

Horse racing factors include speed, class, past performance, post position, stretch gain, beaten favorite, jockey or drivers record, weight (for thoroughbreds) and parked out signs (for trotters). Greyhound factors include speed, past performance, class, favorite box, kennel record, breaking tendencies, and beaten favorite.

Complete instructions and wagering guide included.

THOROUGHBRED, HARNESS, OR GREYHOUND HANDICAPPED \$24.95 EA  
ANY TWO OF THE ABOVE = \$ 39.95 ALL THREE FOR \$59.95

#### ZIP BASIC COMPILER \*\*\*

ZIP is an aid for experienced BASIC programmers. It allows one to write a program in BASIC, and then compile that program into machine code. A compiled BASIC program will run typically about 100 times faster than a complete BASIC program. ZIP also checks your BASIC program for any BASIC errors before the start of the compilation. After ZIP has compiled your program, it will give you the address where the code is located, and the number of bytes used for your program. You'll then need only to write a short Basic Leader type program to load your code and call the routine. Complete instructions and a great Demo Game included.

\$ 19.95

\*\*\* WRITE FOR OUR FREE CATALOG \*\*\* MANY OTHER TS2068 ITEMS \*\*\*

Add \$3.00 to total order for shipping and handling  
Use mailing address above



Scott if you can use any of this information in T-S HORIZONS please feel free to do so.

Thanks, Barry E. Henley, Riverdale, Ga.

Thanks for the wealth of information Barry.

I might add that our A & J quit working and on a hunch we switched the connector from port 0 to port 1 on the interface. You have to POKE 24201,1 after power up or NEW, but it works fine. Of course we'll have to have the interface repaired if we want to add a second drive.

Dear Rick;

When you buy a second Microdrive from A & J it arrives without any instructions. To enable your first drive 0, you must POKE 24201,0. To use your second drive 1, you POKE 24210,1. Be careful because on start up or if you RAND USER 0, drive 0 is automatically chosen.

Mr. Jim Howell of A & J Microdrive has advised me they will begin selling a centronics (parallel) printer interface and chip in the middle of April for \$39.95. The printer interface mats with the edge connector on top of the microdrive interface. The chip must be inserted in an existing socket in the A & J interface.

Cordially, W. Phil McConaghey, P.E. Pembroke Pines, FL.

More on the A+J ! Thank you Phil.

See Ya next time at the Cluttered Desk . Keep writing and don't forget to mention to the advertisers where you saw their ad. TSH

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## Editorial

"The King is dead...Long live the King!"

By Bill Ferrebee

It was one year ago that Timex closed its doors to the world of computers. Not that they didn't believe in their product. Quite the contrary...it was a great line of computers. Many outside critics gave them rave reviews, and some felt it was to be THE competition for Commodore.

No, it was upper management that "pulled the plug" on T/S. "Not enough R.O.I. (Return On Investment)..." was their excuse. They could get a greater Profit Margin on watches, so they gave the Computer Division their "pink slip".

But did Timex/Sinclair really "die"? Did it go the way of the Nash, Pet Rocks, and Mood Rings???

NO - NO - NO !!! Although the "Big Boys" like Ziff Davis (SYNC), Memotech, and other major suppliers channeled their energies in other areas, it was the independent producers that kept T/S alive.

People like...Bill Russell, Jules Gesang, Doug Dewey, Ray Kingsley, Tom Woods, John Olinger.

Companies like...Zebra Systems, E. Arthur Brown, AEROO, Ramex, Games to Learn By, Curry Computer, Knighted Computers, English Micro Connection, Byte Back.

Publications like...SUM, Time Designs, SyncWare News, Quarters, and yes, T-S HORIZONS.

Also, let's not forget the great network of T/S User Groups throughout the United States (and Canada and Mexico). They are a MAJOR source of information for all Timex/Sinclair users.

Finally...YOU ! Yes, just by you reading this editorial, you have shown that you believe in T/S. Keep the faith growing and you will NEVER lose in life.

No, we're not dead..we're not even hurt! This "family" we have together grows stronger each day, and I feel sorry for those that don't belong!

Long Live T/S...FOREVER!!!

TSH



## HARDWARE project

NOTE: T-S Horizons and the author assume no responsibility for damages arising out of the use/misuse of these articles. The reader must understand that any modifications suggestion here is to be taken at the reader's own risk.

One of the most overlooked accessories for the low priced home computer is a voltage surge suppressor. I never thought of getting one for my Timex until a power outage and the resulting power surge wiped out the information stored on a hard disc at work.

After checking several catalogs, I found the only surge suppressor I liked cost over \$15.00. With a trip to Radio Shack and \$4.50 I purchased the components to install a surge suppressor inside the power strip I am using to power my computers.

While I had no problems modifying my power strip, if you are not familiar with electrical wiring techniques, ask someone who is to help you. As always, remember to take all precautions to avoid an unpleasant and possibly dangerous electrical shock.

### WHAT YOU WILL NEED:

soldering iron  
rosin core solder  
3 MOVs Radio Shack part no. 276-570  
screwdriver or pliers to fit the screws on your power strip

### WHAT TO DO

Since power strips will vary in construction details, the following instructions don't give the exact layout of the components inside the terminal strip. You will have to determine the best position for the components inside your power strip.

1. Remove the cover from the back of the power strip.
2. Locate a terminal that a green (ground) wire is attached to.
3. Solder one lead from each of two MOVs to the ground terminal.
4. Solder the other lead from one MOV to a terminal that is attached to a white wire.
5. Solder the lead from the other MOV to a black wire terminal.
6. Solder the remaining MOV between a black wire terminal and a wire terminal.
7. Carefully bend the three MOVs back inside the power strip.
8. Replace the back cover of the strip making sure you will not create a short when screws are reinserted.

Your surge suppressed power strip is now complete. The only trouble is, you will never know its working!  
TSH

### NUMBER TO WORD By John Bell

Number To Word is a short (relatively) program that converts a 7 digit phone number into all possible combinations of the letter-number equivalent. (2187 of them!)

If you enter your phone number, you might find a easily remembered "word" that matches your phone number. For instance, the number 266-8378 would yield the word "convert".

An explanation of the program follows.

To use the program, just enter "RUN" when you see a likely word, press any key and the program will pause momentarily while you record the word.

LINE #	EXPLANATION
20	"POKE" the 2068 into capitals only mode
80	dimensions the string variables and sets up A\$ to contain the letter equivalent on numbers 2-9
100 - 160	routine enters and error traps the phone number

```

180 - 240 sets up array "N" to "POINT" to
all possible combinations of
letters
260 - 310 converts the number into an alpha
string of 7 characters. ( 290
"POKE" the 2068 to scroll automa-
tically)
300 - 400 ends processing. TSH

1 REM NUMBER TO WORD
2068 VERSION
*****
10 REM SETUP
20 POKE 23658,8
30 DIM A$(3,10)
40 DIM C$(7)
50 DIM N(7)
60 LET A$(1,1 TO 10) =
"01ADGJHPTW"
70 LET A$(2,1 TO 10) =
"01BEHKNRUX"
80 LET A$(3,1 TO 10) =
"01CFILOSYU"
90 REM DATA ENTRY
100 INPUT "7 DIGIT NUMBER? ";B$
110 IF LEN B$ <> 7 THEN GO TO 50
120 PRINT AT 21,0;B$

```

```

130 INPUT "IS THE NUMBER CORREC
T? Y/N; ";D$
140 IF D$="y" OR D$="Y"
THEN GO TO 160
150 GO TO 100
160 CLS
170 REM PROCESSING
180 FOR A=1 TO 3: LET N(1)=A
190 FOR B=1 TO 3: LET N(2)=B
200 FOR C=1 TO 3: LET N(3)=C
210 FOR D=1 TO 3: LET N(4)=D
220 FOR E=1 TO 3: LET N(5)=E
230 FOR F=1 TO 3: LET N(6)=F
240 FOR G=1 TO 3: LET N(7)=G
250 REM CONVERSION
260 FOR H=1 TO 7
270 LET C$(H)=
A$(N(H),VAL B$(H)+1)
280 NEXT H
290 POKE 23692,255
300 PRINT C$
310 IF INKEY$ <> "" THEN
PAUSE 160
320 REM CONTINUE PROCESSING
330 NEXT G
340 NEXT F
350 NEXT E
360 NEXT D
370 NEXT C
380 NEXT B
390 NEXT A
400 PRINT "PROGRAM COMPLETE"

```



## USR - User group Service Report

Welcome to the first installment of the User Group Service Report. Our current, though tentative, plans are to run this report on a regular basis alternating every other issue with another column (possibly Sinclair World Report which would tell us of European and other foreign developments - if we can talk a certain Canadian friend of ours into writing it).

At any rate the purpose of this column is to help user groups of every size to operate more successfully and maintain a high interest level among members. Of course much of the information will be of interest to users who have no convenient access to groups. We hope that suggestions and ideas that have worked for various groups will be submitted to us for possible publication. Send them to TS Horizons, User Group Services, 2002 Summit St., Portsmouth, Oh 45662.

### SPECIAL FREE OFFER TO USER GROUPS

At least two other T/S supporting publications have printed user group listings which were outdated and inaccurate. T-S Horizons is currently compiling a more up-to-date list. We mailed a questionnaire to a large number of groups. In exchange for filling out the form we promised to send free samples of a selected issue of TS Horizons for each of their members. To get the free samples for your group, please write to us and answer the following questions: User group name? Mailing address? Contact person? Phone number? Name of newsletter (if any)? Number of issues within the last 12 months? Membership cost (if any)? Miscellaneous information (optional)? Number of copies of TS Horizons needed? Address to mail copies to \* ?

\* Indicate if the answers to these questions are not to be published. We would like them for our records at any rate.

This offer of magazine samples will be honored if your group has three members or a hundred. We hope to get some new subscribers from the deal, but our main goal is to help maintain interest in your group.

### -User Group Listings

Recently our local user group was sent 2 copies of a great little British magazine called ZX Computing. It is over 130 pages long and filled with articles and programs

for the ZX81 and Spectrum. It is a very nice magazine and it came absolutely FREE. Apparently, they got our name and address from some user group listing.

Beside the several Timex-related publications that will list your user group for you, many general publications will also. Every user group, big or small should write to the Computer Shopper and ask that your group be listed. They have a huge four-page list of about 1200 user groups. By being included here, you may get some junk mail, but you may get some new members and a rare goody like ZX Computing.

Some tips to remember:

1. Include Timex and/or Sinclair prominently in the name. (ours is listed as "Timex-P.O.R.T.S., Portsmouth Ohio Region Timex Sinclair User Group" in the Shopper)
2. If your group is located near a state border send in a listing for each state. (We have a listing for Kentucky).
3. To be listed in the Shopper send your group's name and address to P.O. Box F, Titusville, FL 32781 or call 305-269-3211.

Other magazines that print notices of user groups are Infoworld and Byte. Include more information when you write to these. (news-letter cost, meeting times, etc.)

### ZEBRA SYSTEMS DEMO VIDEO TAPE:

In the most innovative marketing move we've seen from a TS related company, Zebra Systems has produced a very impressive videotape of the capabilities of their Zebra Graphics Tablet for the 2068. The tape is 20 minutes long and is an actual recording of the Graphics Tablet in use. Zebra did a near professional video job with this, and is offering the tape on loan for free to recognized user groups. Unfamiliar user groups and individuals will be asked for a \$10 refundable deposit. I've seen the tape and it's great. The product is reviewed by Bill Ferrebee later in this issue. The tape is sure to be the hit of your next meeting. To order call 718-296-2385 or write Zebra Systems 78-06 Jamaica Ave., Woodhaven, NY 11421. Specify VHS or Beta format. Loan period is 60 days.

### Conclusion

That's all for this issue but we are anxious to hear from you. If you have had some successful ideas that helped your group to grow drop us a line. All of us groupies have to stick together. TSH



# HARDWARE *project*

keyboard to work, write me at the address below describe your problem and I will do my best to help. I would like to thank Scott Sarisky of Idaho Falls, Idaho for his useful information, and drawings.

My address is: John Marion  
HC 63 Box 650  
Greenup, Ky 41144

TSH

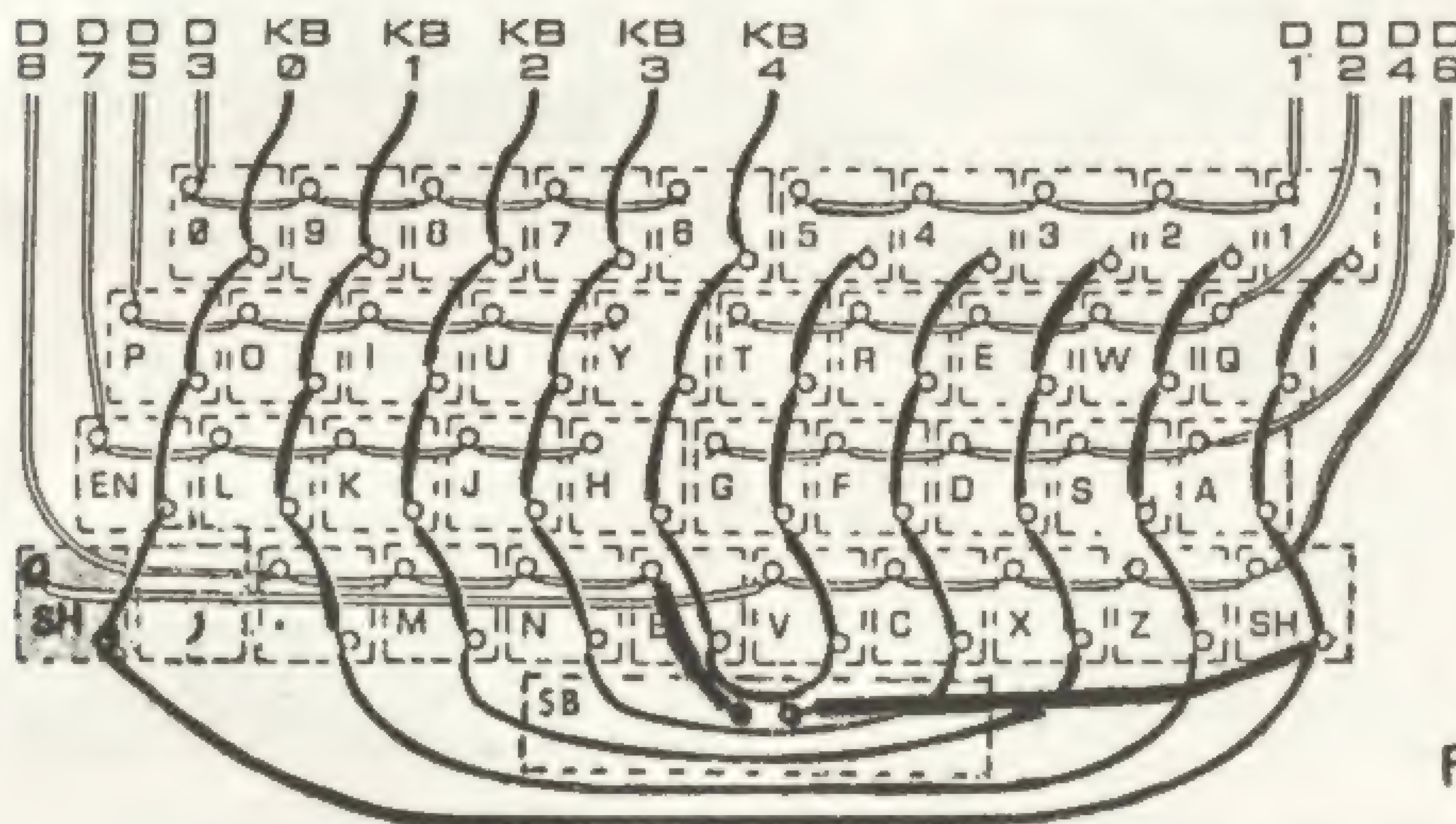


Fig. 1

## CASSETTE NOTES

By Timothy A. Carver  
From the T/S Connection

## HARDWARE *hints*

I can't remember a user group meeting or a discussion with users that I haven't been asked why their tapes don't load or save right. There are few situations causing more frustration than finding out that the program you spent 4 hours entering by hand hasn't saved properly. Except of course finally obtaining a program you have been waiting months for, just to find that it won't load. The problem most of the time isn't the computer, but the cassette deck. Hopefully with these notes, your problems will clear up.

Before you try anything, go back and REITY everything your manual says about tape saving and loading. And if you can, try saving and loading on another cassette (preferably one that is being successfully used for saves and loads by another user).

First, has your tape unit been cleaned recently? Tape heads build up dirt and oxide particles with usage. A good tape unit will eventually start to lose performance after 150 hours or so. I recommend that you use a good non-abrasive head cleaner after every 100 hours (I make it a monthly procedure because I use my system so much).

Second, are you using batteries or a plug in power source? I do not recommend the usage of batteries for computer use. A stable power source is much better suited for proper saves and loads than are batteries. If you need an adapter, you may be able to find one at your local Radio Shack.

Third, are your tape heads out of alignment? I can't think of a simple test for this, so if all else fails, you might try taking the cassette to a local service shop and have them check the heads (the cost is minimal).

Finally, check your cables. A loose wire inside the connector can cause severe loss of signal. Try a different set or use a continuity tester to see if you have any shorts or bad connections.

If after you have tried the manuals instructions and these hints you still have troubles, then I would think the problem is in the computer. Take the unit to a service center and have them check it out. The Timex service center is closed and all service is being referred to:

The T/S Connection  
3832 Watterson Ave.  
Cincinnati, Ohio, 45227  
513-271-5575

TSH



# QL Report

From Curry Computer, 5344 W. Banff, Glendale, AZ 85306

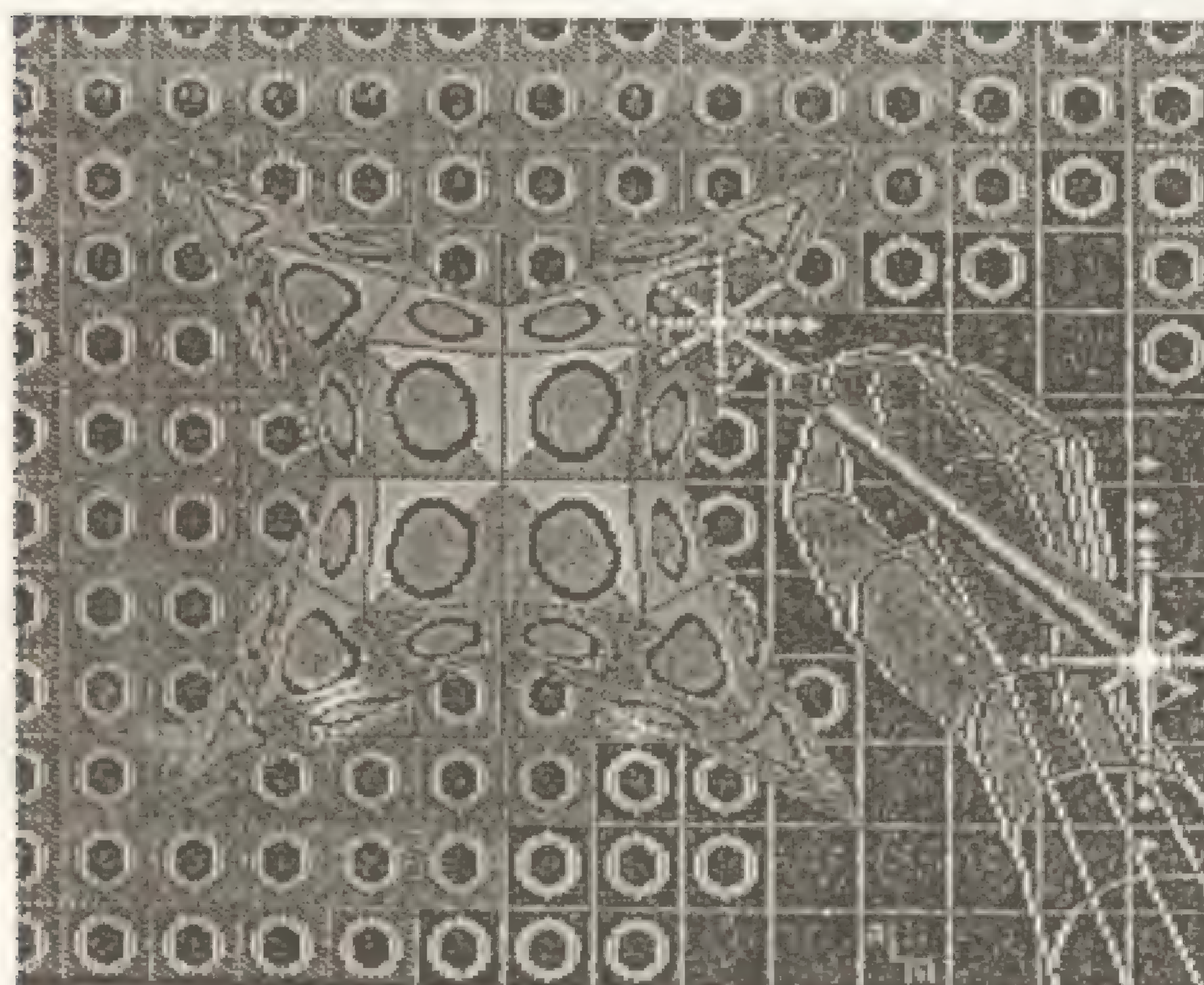
NOTE: This report is excerpted from Curry Computer's "QL REPORT" No. 4 with the kind permission of Rob Curry.

May is here and hopefully the QL will be too sometime soon. We have seen a lot of new products come into our offices this past month. We have the Computamate Q-Disk Interface connected to our machine and are running a double-sided single drive capable of storing 700K worth of data! Two such drives can be connected for up to 1.44 mb of storage. We shall do an in-depth review of the Q-disk system and tell you what drives are best in the next Report.

We also have a Spectrum microdrive connected to our QL. For inexpensive yet fast storage this is definitely the way to go. We have heard only three external drives are reliable and we will try and check this for you by next month. We will have in stock shortly 8" cables so you do not have to hook up the microdrive backwards. More on this subject also next issue.

We are evaluating and stocking an incredible amount of new software and hardware. QL Chess we have seen and it is absolutely stunning! Not only are the graphics superb, it is the world champion of computer chess games. Try using a joystick with it and it makes for a much more enjoyable game. Also in stock are Typing Tutor, Pascal, Forth, and an Assembler, all by Computer One. Write for our QL catalog for a list of all software currently in stock or on order.

## GraphiQL



For a great little utility program, try WD Utility. This program does everything from multiple formatting of cartridges (which Sinclair recommends) to making back-up copies of all files or individual files on a cartridge or disk. When you first boot the program, it asks you for the correct date and time and then goes on to load the utility which first displays the sectors left/sectors total count on your cartridge or disk and a list of all files with an alpha or numeric character before it. One can in this way load or delete files with one key. You can switch to the directory of the next microdrive easily, delete individual files with one key-stroke-do all those time-consuming chores very fast and very efficiently.

One of the nicer features is that one can order the cartridge with a program entitled QLRef which is an Archive datafile. If, for example, one wanted to find information on QL disk drives, one simply has to type-FIND "disk" and all magazine, book, newsletter, etc. references to disks for the QL will be found. Each record shows author, number of pages of article, magazine issue number and month, etc. Over all, this is a very useful utility and one you will be using a lot. Write for a complete list of what it does.

Another new program is GraphiQL by Talent Computer Systems. A lot of you have seen the xerox of the actual screen dump to an FX-80 of the hand drawing with a light pen. This is one of the demo pictures that comes with GraphiQL. You actually receive 2 cartridges. One with the Master program and another with three demonstration pictures.

GraphiQL is a very user friendly graphics package capable of some very detailed graphics applications. One can use either the keyboard or a joystick. Obviously a joystick is a lot easier to draw with. The on screen help facilities are excellent; you do not have to constantly flip through the manual when first learning the program.

Most of the commands are very straight forward. One can draw lines, circles, boxes, change cursor color, even add text to your pictures. One can enlarge any portion of the screen for detailed pixel work. Pictures can be drawn on the screen measuring 256 by 256 pixels. There is even the ability to define up to 26 "textures" which can be reproduced on the screen in any combination of colors.

The printer dump utility enables you to print your saved picture on your printer. The program is pre-configured for an FX-80 but Talent states in the manual it will help develop suitable dump programs for other printers. Write us for the current list available. Also write us for more information



on this great program. It is a lot of fun and can be put to many practical and educational applications.

I saw an ad in the Phoenix Sunday paper by Sears Business Centers, offering Microsoft's Word, File, and Multiplan (spreadsheet) on sale for only \$156.00 each instead of \$194.99 each and Microsoft's Chart for \$100.00 instead of \$124.99. All this for the Machintosh, another 128K, 32 bit computer. That is over \$500.00 for just the software, more than the cost of the QL with all 4 programs included. And the Psion programs are just as good.

And you are still wondering whether or not to buy a QL? How many computers has Sinclair Research abandoned? The ZX-80 grew into the ZX-81 which is still in production. The Spectrum has been upgraded to the Spectrum Plus which outsells Commodore practically everywhere it is sold. And then there is the QL. You may know a Timex orphan or an IBM (PCjr.) orphan, or a Coleco or TI-99 or Franklin orphan, but not a Sinclair one. Make sure your friends are aware of this. The QL is Sinclair's reentry into the American market. At least tell your friends who are looking at Apples, and Commodores, and maybe even Atari machines, to compare these computers with the QL. Dollar for dollar you cannot get more value for your money anywhere.

The five new books in the QL series listed in our catalogs, should be in this month so write if you are interested in any of them. New programs on order include a Sprite Generator, Backgammon, Aircraft Controller simulation, appointment calendars, home accounting packages, and more utility type software.

Sinclair has changed the serial port connectors to a standard db 25 and the joystick ports to a standard Atari type and that is about the only changes between the American and the British versions. We have a cable that will allow you to go out the RGB port of the computer and hook up to any green or amber monochrome monitor for those of you who do not need or cannot afford an RGB color monitor right away.

In the next issue we will review the Q-Disk interface, and discuss what programming languages are available on the QL. We hear a "mouse" is in the works and will try and get more information on that.

TSH

**curry  
computer**



### THE DEALER'S DEN

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The adaptation of ZX81 peripherals to TS 2068 requires analysis and some thought. The complication arises because of the limited capability designed into ZX81. In other words, it is hard to make a universal bus adapter which will make every ZX81 peripheral work with TS2068. Every case has to be studied carefully and then appropriate decoding and proper software used for the purpose.

In light of the above, let us define a limited objective for a bus adapter, an adapter which will enable TS2068 users to utilize a 16K RAMPACK as if it were in the DOCK bank, say, from address 32768 to 49152. Later, we will mention the modifications necessary to use the RAMPACK in the EXROM bank of the TS2068.

As you know, TIMEX made the TS2068 bus such that when the slot of the bus is aligned with bus slot of the ZX81 bus, Basically the same type of signals appear on both buses. In the case where a corresponding signal did not exist, the pin on the bus was left without any connection. This way, the connection of ZX81 peripherals to the TS2068 bus will, generally speaking, not damage the computer. To highlight the correspondences of the buses, Fig.1 shows the two buses with the slots aligned.

Our goal of interfacing the RAMPACK to the TS2068 can be achieved by directly connecting all corresponding pins on the two buses. The only connection which is not completed is the A14 address line. The reason for that becomes obvious when one thinks about the way the ZX81 RAMPACK is selected when connected to the ZX81. The RAMPACK on a ZX81 gets selected when A14 goes high. In other words, in order to use the RAMPACK successfully in a TS2068 bank, then the A14 pin of the RAMPACK should be logic 1 when the appropriate bank is selected. The appropriate address range conditions (MREQ, RD or WR, and the lower address bits) must also be met on the bus.

Our objective was to map the RAMPACK to an address starting at 32768 in the DOCK bank. In the TS2068, when the DOCK bank is active, the condition is indicated by logic "0" on the ROSCS pin of the TS2068. To map in the

A15 = 1, ROSCS = 0

A14	A13	SELECT
0	0	32K to 40K
0	1	40K to 48K

TABLE 1

range above 32768 requires the A15=1. Another restriction in the design is to be able to select either the lower 8K or upper 8K of the 16K RAMPACK as well as the whole 16K, under software control. The condition on address lines A13, and A14 for such a selection capability is shown in Table 1.

The circuit which achieves the desired result is shown in fig. 2. The output of the decoder selects memory in chunks of 8K. The two diodes provide the capability to switch in the whole 16k. For the RAMPACK to work properly, there is the need for 9v power. Since the DC voltage supplied from the powerpack of the TS2068 is too high (20-22V under no load) it cannot be use with the RAMPACK. Fig 2b shows a regulator for this purpose. A 9v regulator is shown. It was found that 9v regulators are hard to come by. Tests showed that 8v regulator also worked properly. It is essential that you use at least a clip-on type of heat sink on the regulator; otherwise, you will have thermal shut down, at best, and at worst... The temperature with a clip-on type of heat sink will rise to approximately 80 degrees C, which means a burning sensation. It does operate safely without thermal shut-downs, and under continuous use.

To switch the first 8k of the RAMPACK starting from 32768 use: OUT 244,16

To switch-in the whole 16k starting from address 37268 use: OUT 244,48

To switch-in the upper 8k of the RAMPACK from address 40960 use: OUT 244,32

Let's assume that you've switched in the entire 16k. To test it, enter (in the immediate mode).

POKE 32768,99

POKE 49151,99

Now, PRINT PEEK 32768,PEEK 49151

You should see a pair of 99's on the screen.

Next, OUT 244,0

This returns you to the home bank. Try the PEEK's now. If all is working, those 99s are gone.

Return to the Dock bank with: OUT 244,48 and repeat the PEEK's.

Do note that, as the Dock RAM is not initialized, it will contain gargbage, at first. You can write your own initialization



routine (FOR 1=32768 TO 49151: POKE 1,0:NEXT 1), or use the ROM routine (NEW). Also, if you PEEK memory locations & read the decimal number 14, your RAMPACK is not properly connected.

One application for the extra memory is as development tool in writing AROS software. You can write your BASIC (and/or MC) program as usual, though you may only use a total of 16k for program, MC and variables. It can then be moved into the DOCK bank of 6k, either using the function dispatcher of your own software. Don't forget to add those first few bytes which indicate AROS (or LROS) software. Your program can then be executed from the DOCK, just as if it were on EPROM, but without the time and expense of making

TS 2068

GND	GND
SOUND	VIDEO
IOAS	BUSISO
BE	B
ROSCS	G
EXROM	R
RFSH	NC
MI	A <sub>4</sub>
RESET	A <sub>5</sub>
BUSRQ	A <sub>6</sub>
WAIT	A <sub>7</sub>
BUSACK	A <sub>8</sub>
WRB	A <sub>9</sub>
RDB	A <sub>10</sub>
IORQB	A <sub>11</sub>
MREQB	A <sub>12</sub>
HALT	A <sub>13B</sub>
NMI	A <sub>14B</sub>
INT	A <sub>15B</sub>
D <sub>4</sub>	A <sub>3</sub>
D <sub>3</sub>	A <sub>2</sub>
D <sub>5</sub>	A <sub>1</sub>
D <sub>6</sub>	A <sub>0</sub>
D <sub>2</sub>	CLK
D <sub>1</sub>	GND
D <sub>0</sub>	GND
SLOT	SLOT
DZIN	NC
D <sub>7</sub>	+5V
A <sub>7RB</sub>	+15V
EAR	TAPE out
GND	GND

FIG. 1

ZX 81

RFSH	ROMCS
MI	A <sub>4</sub>
RESET	A <sub>5</sub>
BUSRQ	A <sub>6</sub>
WAIT	A <sub>7</sub>
BUSACK	A <sub>8</sub>
WR	A <sub>9</sub>
RD	A <sub>10</sub>
IORQ	A <sub>11</sub>
MREQ	A <sub>12</sub>
HALT	A <sub>13</sub>
NMI	A <sub>14</sub>
INT	A <sub>15</sub>
D <sub>4</sub>	A <sub>3</sub>
D <sub>3</sub>	A <sub>2</sub>
D <sub>5</sub>	A <sub>1</sub>
D <sub>6</sub>	A <sub>0</sub>
D <sub>2</sub>	CLK
D <sub>1</sub>	GND
D <sub>0</sub>	GND
SLOT	SLOT
RAMCS	+9V
D <sub>7</sub>	+5V

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17

## \*\*\* NAMES \*\*\*

### A Genealogical File Program

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MAP Apr. 29, '85



one. Once completely "bug free" you could download to a cartridge; like John Oligers EPROM BOARD. We'll be analyzing other ZX81 peripherals for compatibility with the TS 2068, using bank switching, in the months ahead and plan to produce an expanded version of the chart shown as TABLE 2. The items marked A1 in Table 2 are those which can be made to work with this adaptor.

We used a Zebra joystick adaptor, stripped of its on-board parts and heavily modified as the basis of our adaptor, but other hardware is also suitable. Examples are, a computer Continuum edge board, Hobbyboard boxes and even a Hunter board. These all require modification, as well.

There are many other potential uses for the 16 RAMPACK in this DOCK mode. Some include communications and/or printer buffer, data storage, games screen etc. If you have a good suggestion why not send it in to this publication and/or LIST.

Finally, the RAMPACK can be operated in the EXROM bank by disconnecting the ROSCS signal from pin 4 of the LS138 decoder. Instead connect the EXROM signal from the TS2068 bus to the same pin. To write-protect the RAMPACK break the direct connection of the WR signal between the computer and the RAMPACK, install a switch, and pull up the WR signal to 5v using a 10k resistor on the RAMPACK side of the switch.

By N. Pashton and P. Doonnolly  
c/o L.I.S.T. P.O. Box 438  
Centerport, NY 11721-0438

TSH



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—J. Trenbick

"...always stop to read CTM, even though most other magazines I receive (and write for) only get cursory examination..."

—Fred Blechman, K6UGT

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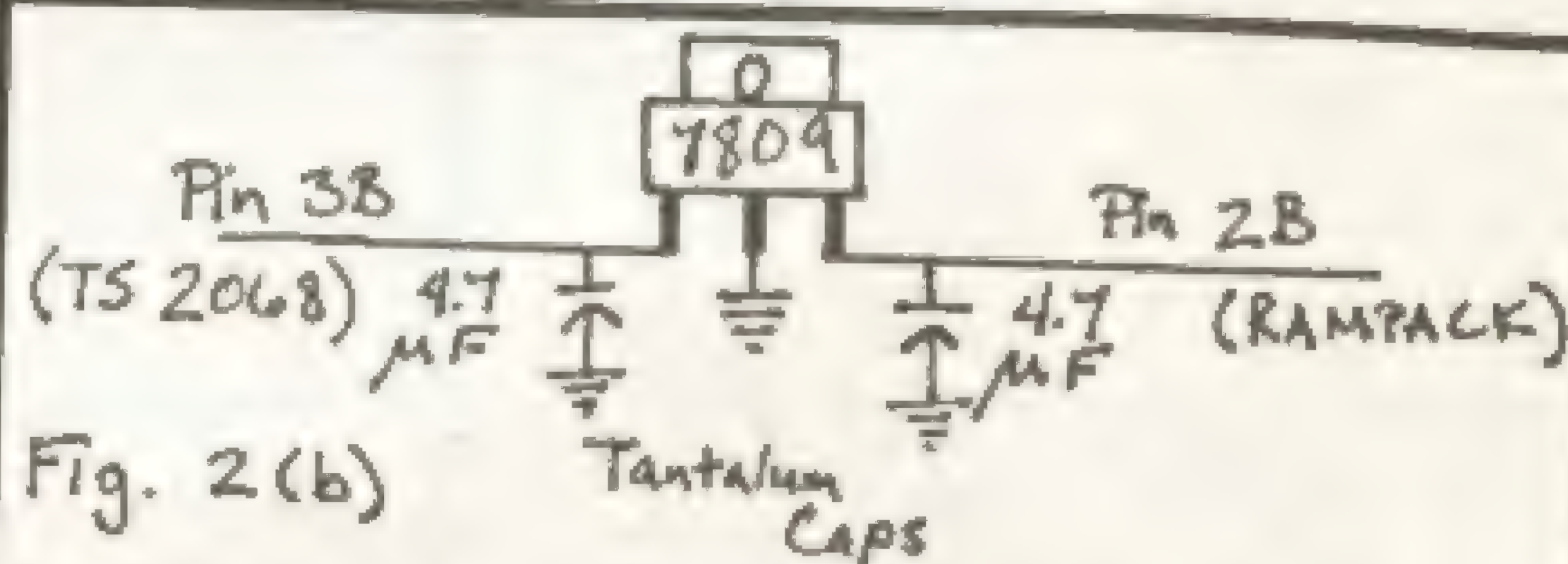


Fig. 2(b)

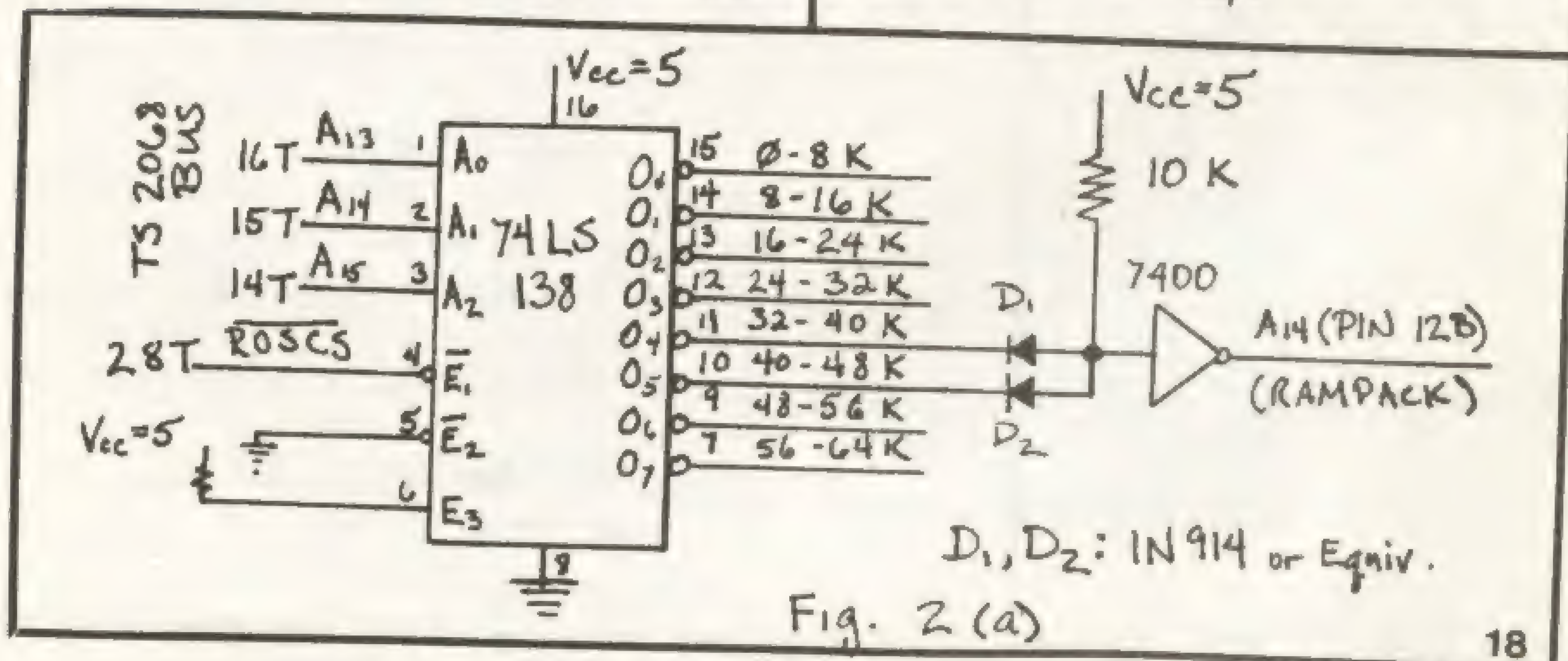


Fig. 2(a)



# Machine Code Graphics Loop

by Bernard Bush

A super color graphics program, with some ideas on writing in MC.

Some time ago, I wrote a graphics program called Graphics Loop, which appeared in Sync. (Jul/Aug 82, page 14). Eventually I wrote a machine code version. When I got my TS 2068, I tried to write a similar program using color graphics. The TS 2068 uses a different method of keeping track of the screen display, and the machine code for it was quite long, although I did get a program which worked. A short time ago I found an easier way, with a surprisingly short program. It creates excellent color graphics, and the variations possible are endless. What I did was take a fairly simple program which I found in Howard Sams Timex Sinclair 2068 Intermediate/Advanced Guide and added a few ideas of my own. The original program simply poked the whole screen with a number such as 51, resulting in a screenful of black and white lines. By varying the number between 0 and 255, you can get many variation, but always black and white lines, and one will soon tire of it. The program first loads WL with the starting D file address, 16384. (17,1,64). Following this the BC register is loaded with the total D file count, 6143. Next the instruction LDIR (Load, increase and return) causes a move by HL to the second address, and so on, till the screen is filled.

I had discovered previously that if a program runs over the last d file address, and spills into the Attribute file, any number poked into that file will produce colors on the screen, depending on the number.

So why not extend the total number of addresses so that The Att file is also filled by the program? This will result in automatic Paper and Ink selection for the whole screen. To do this, merely change BC to 1,0,27 instead of 1,255,23. That is 256\*27, or 6922 addresses. (it takes 3\*256, or 768 addresses to fill the Att file). And lo, the entire screen is filled with color. Mostly solid colors, though, and not very exciting, as yet.

Now comes the second idea. What if you added 2 addresses to the DE register. (17,2,64). Will the system crash? It will not, and you have added a step feature to your loop. The system does not erase even if you step more than a single line, more than 32 addresses. So now you have what is basically my original graphics loop program if you can find some way of continually changing the number poked, and also changing the step.

When I first got this to work, I got some good graphics, but found that they always started out with a black screen, and it took several screenfuls before the colors got decent. I then saw that I could start the program with the paper and ink color I wanted, by selecting the starting numbers. (See the Attribute Byte Format, page 252 in the TS manual). Whatever paper color is initially selected, it remains that way for some time, allowing for many variations in color and brightness. You can also alter the range of steps, and will find an endless variety of designs possible. Keep the numbers used less than 128, if the Flashing bothers you. If not, use numbers to 255. My program represents only one of the many starting combinations and steps possible.

Here is one version of my program. One could also start by using inputs for starting A and B and then use random numbers to replace lines 70 and 75. Use INT numbers as the computer will not accept decimals.

```
5 REM MC GRAPHICS LOOP
6 REM B BUSH DEC 84
10 CLEAR 64999: BORDER 1
15 LET A=54: LET B=1
20 RESTORE 50
25 FOR J=1 TO 14
30 READ Q: POKE 64999+J,Q
35 NEXT J
50 DATA 33,0,64,54,A,17,B,64,1
  0,27,237,175,201
60 RANDOMIZE USR 65000
70 LET A=A-1
75 LET B=B+1
80 IF A<-255 THEN LET A=54
90 IF B>32 THEN LET B=1
100 PAUSE 100: GO TO 20
```

There you have it. What an incredibly short machine code program for all that it does! Try different starting Attributes for A by picking numbers 0 to 255 at random, or select the paper and ink values from the chart. (Page 252 TS 2068 Manual). You probably will want to use a pocket calculator unless you are adept at mental arithmetic.

Needed next is a Basic program to constantly change the variables and then run the machine code over again. My program also uses a slightly different program to poke the machine code into memory. It allows you to always keep track of how many bytes of Machine code are in the Data statement, by checking the J loop. (The ending number always represents the number of bytes.) This can be a help when writing and rewriting the code.

TSH



# HARDWARE *history*

A. Gindin

The editor has asked me to write a short historical note about a little-known device, the original Sinclair computer, actually the Sinclair scientific programmable calculator. While today we take calculators for granted, and, in particular, even programmable calculators are selling in the range of \$35. Ten years or so ago this was a major event. To give you an idea of the magnitude of the bargain about the same time Hewlett-Packard had just come out with their programmable calculator. The ad I have is dated 10/74. The HP calculator sold for \$795 plus state and local tax and from looking at the description it did not perform significantly better than the \$35 programmables of today. It did have one advantage and that was one could insert a program card about 1/2 x 3 inches which would contain a 100 step program. One could either write one's own programs onto the card or one could buy a group of cards from Hewlett-Packard covering finance, weights, measures, mathematical functions, statistics, or medical applications.

This same calculator is still currently being used in intensive care units for repetitive calculations such as cardiac output where it is usually mounted on a small printer. In fact, it has had some facilities even beyond the present day computers going from 10 exponent - 99 to 10 to the 99th which is somewhat greater than the range of the Sinclair ZX81. Thus, while a powerful unit, \$800 plus \$45 for each package of programs was a bit more than most of us can afford for personal use.

It was thus gratifying to see the Sinclair selling for about \$60, even though it had a few less features. The number range was the same, 10 to the -99 to 10 to the 99 but the programs were limited to 24 steps. Available mathematical functions, log, trig, etc., were comparable and while it did not have

magnetic cards that could be inserted it did have a feature that was almost as good. There were 50 pages of formulae to roughly cover the same data and presented in a form so that one could easily enter them into the "computer" without even having to translate into the reverse Polish notation of the instrument. I estimate that such a device would have saved the average science major in college 300 hours of repetitive calculation over the old slide rule. For this type of work it is probably simpler to use this device than programming a computer if only a few iterations are contemplated. To the best of my knowledge it was never sold in this country as the Sinclair, but I did see it at Radio Shack under their name for at least a brief time. Personally, I never felt that it received the publicity it should have had to compete with HP. At less than 10% of the price it was clearly the better buy. The sleek black case that was the forerunner of the ZX81 with the famous Sinclair logo also meant that it was much better looking and easier to read than the HP. Another interesting feature was that all numbers were displayed in exponential form which may be one reason why it never caught on with the general public, but then again most people aren't looking for such a powerful calculator.

A second Sinclair programmable, the Sinclair Cambridge programmable was available at least through the mail for \$29.95 plus \$3 postage with a 294 program library at an additional \$10. This was styled slightly differently measuring 4 1/2 x 2 inches and weighing only two ounces, whereas the original was 6 x 3 inches. Soon Sinclair will do it again with the QL which will have all the capabilities of the Mac at only \$500. Now if we could just hire Sinclair to design for the pentagon we could probably eliminate the national deficit in about one year.

TSH



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# HARDWARE *review*

REVIEW:  
Zebra Graphics Tablet  
Tech-Draw Software  
By  
Bill Ferrebee

PRODUCT: Zebra Graphics Tablet  
PRICE : \$89.95  
PRODUCT: Tech-Draw  
PRICE : \$19.95

AVAILABLE FROM: Zebra Systems, Inc.  
78-06 Jamaica Avenue  
Woodhaven, NY 11421

There have been many great enhancements developed for the TS line of computers since their inception. Memory expansions, joystick adapters (both for the 1000/1500), printer interfaces, microdrives, and more.

And one of the main companies in the forefront of this product development has been Zebra Systems. Zebra has believed in T/S from the start and continually develops more great products to further the cause.

Zebra's latest products are definitely some of their finest. The Zebra Graphics Tablet allows anyone to become a "weekend Picasso", and have some great fun with their 2068.

ZebraPainter is a great piece of software. It meets all the features of its counterpart for the C64. I have experience with both, and I find ZebraPainter to be the superior program. Finished pictures can be sent to a 2040

Thermal Printer, and if you happen to be left handed (like me!), you can reverse the software to make it easier to use!

I feel that the Zebra Graphics Tablet will be the Product of the Year in the 2nd Annual T-S HORIZONS Awards Issue.

Making that statement, I will also make my prediction of the Program of the Year: Tech-Draw, also from Zebra.

TECH-DRAW is a High-Resolution graphics program that was inspired by the capabilities of Apple Computer's Macintosh and its "MacPaint" program. TECH-DRAW features "pop-down" menus for selection of the brushes (16) and shading patterns (35). You also have a selection of three text fonts in three sizes!

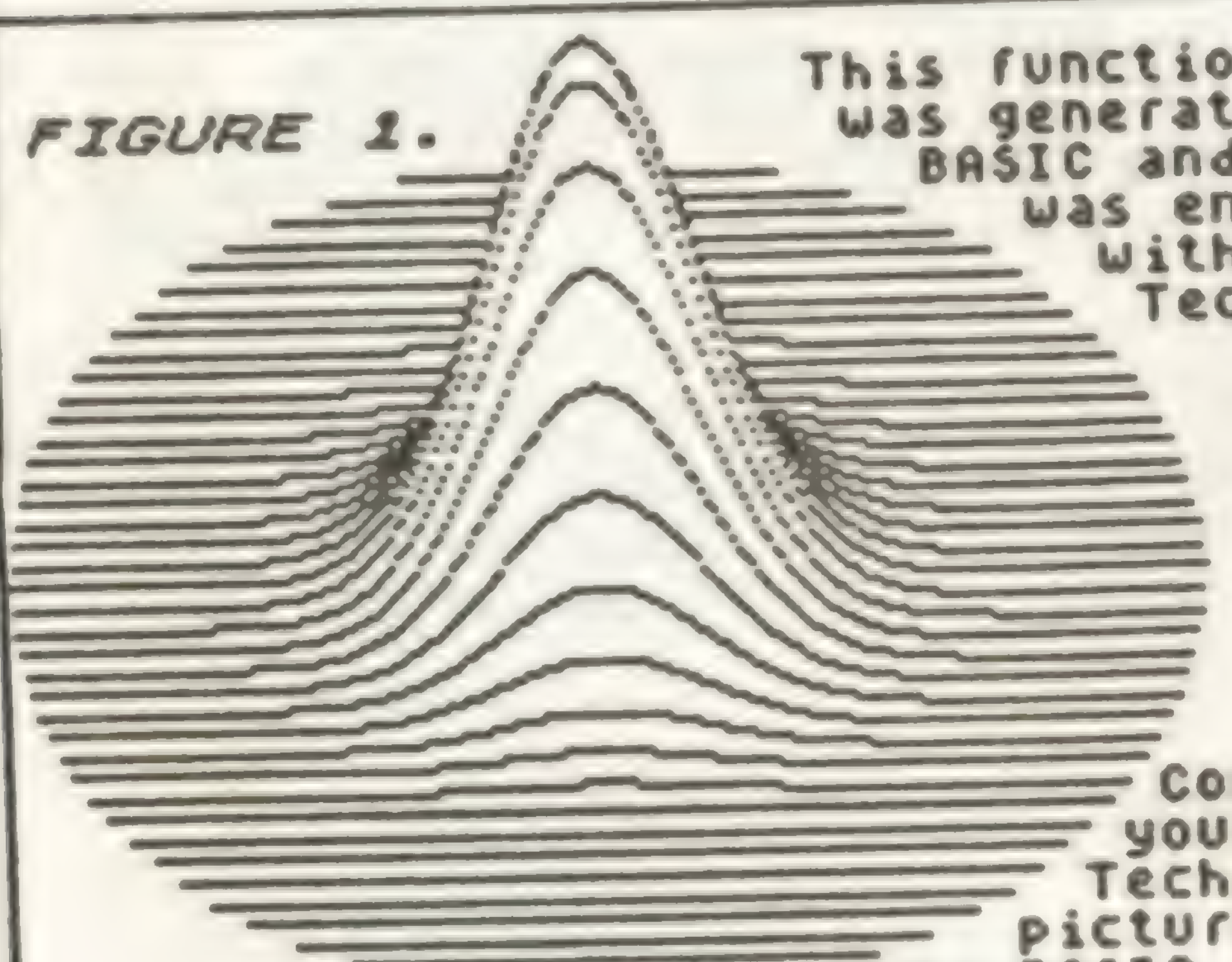
(Samples of actual printouts are shown in Figure 1.)

TECH-DRAW not only allows you to print out to the 2040 Thermal Printer, but to a number of Full-Size printers. The Olivetti Ink-Jet, Gorilla Banana, and Memotech DMX-80 (that's mine!) are among the many printers that TECH-DRAW supports.

Zebra is constantly working to make their products usable for many people, and this support of a number of printers proves it.

I highly commend Zebra Systems for ANOTHER job well done, and hope they continue making more great product for the T/S line of computers!  
TSH

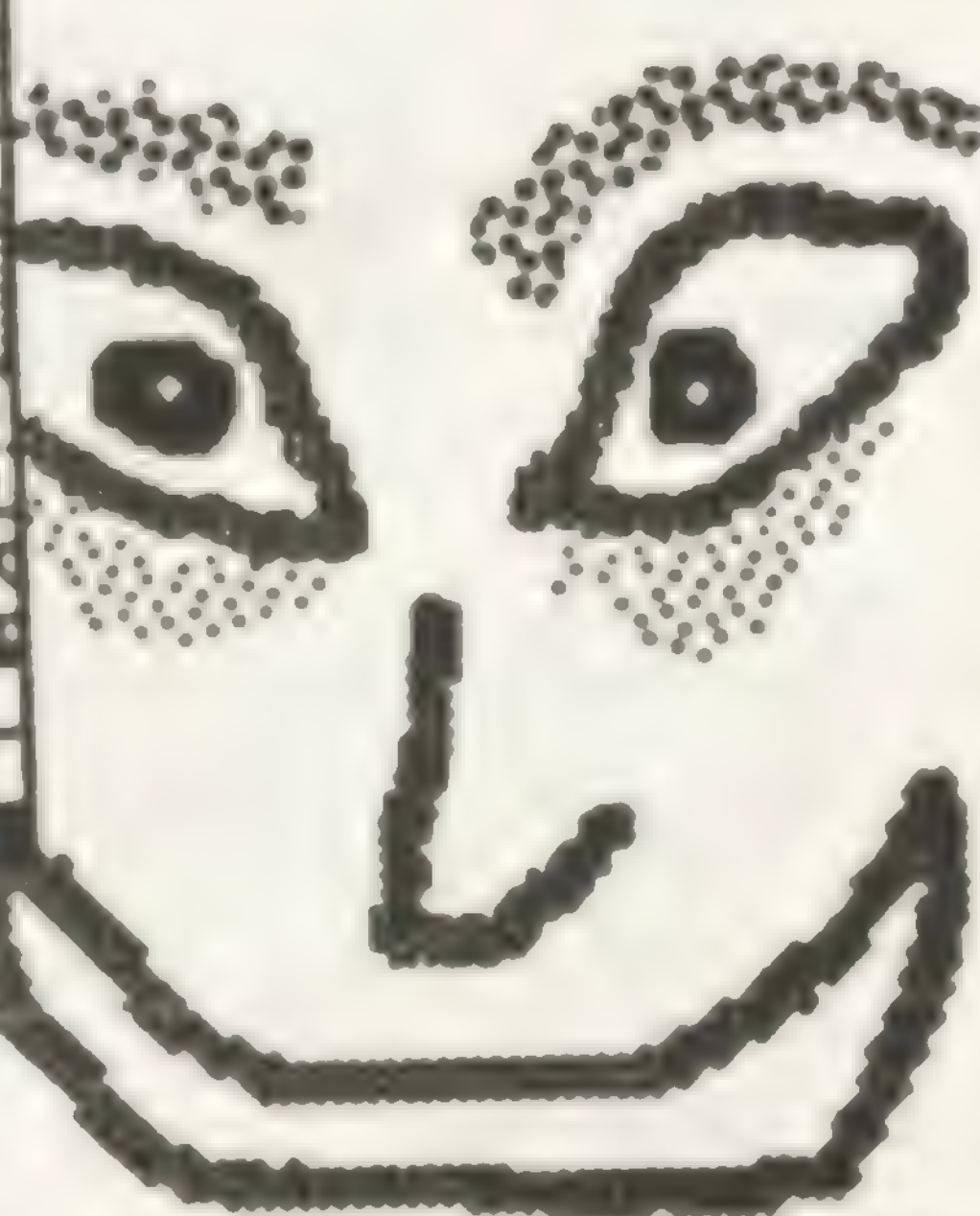
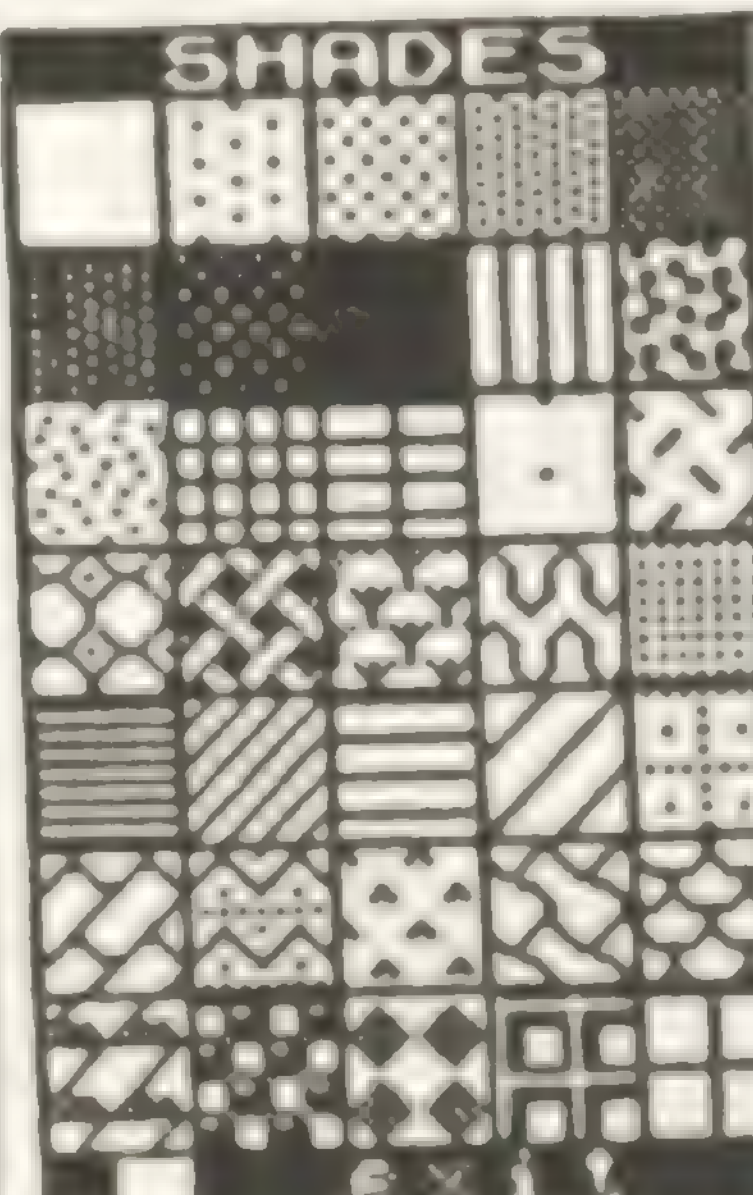
**FIGURE 1.**



This function plot was generated in BASIC and then was enhanced with Tech-Draw.

Conversely you can use Tech-Draw pictures in your BASIC programs.

**SHADES**



**DRAW MENU** SHADE BRUSH HORZ LINE CIRC UNDO FIL  
BCLR BORD TEXT IAO CLS



2068 Word-Processor  
Software Evaluation  
(Part III)  
By Bill Ferrebee

In this installment we conclude our look at Word-Processing Programs available for the TS2068. Make note that this does not include programs written for the British counterpart, the Spectrum. Programs written for that specific machine will not work on an unmodified TS2068, because the rear edge connector channels are different between the two machines.

Also, this being the conclusion of the series does not mean that I have covered All of the Word-Processors for the 2068. I reviewed all of the programs that were available to me. If there are any others out there that should be looked at, please forward a copy of them to me, and I will be glad to give them coverage.

MSSCRIPT  
\$69.95  
21st Century Electronics  
P.O. Box 5037  
Guttenberg, NJ 07093

In all areas of competitive business, there seem to be at least two "big boys" battling it out...Coke & Pepsi...Ford & GM...IBM & Apple...etc.

The same holds true with Word-Processors for the 2068. After looking at all the programs I had available, it came down to TASWORD TWO (reviewed in Issue #12) and MSCRIPT as the main contenders.

MSCRIPT is the Word-Processor that TIMEX itself was going to release. Written by Micro-Systems Software (the authors of MTERM & MTERM II), it was designed to work with the AERCO printer interface.

MSCRIPT comes with a 70-page manual in a very nice vinyl binder. The latest version I received had the feature to allow you to choose the colors of INK and PAPER you wanted to use. MSCRIPT utilizes a 64 column screen, but you are not limited to this for your print-out. You can make your document as wide or as narrow as you want.

MSCRIPT was not really developed for the TS2068 alone. Micro-Systems developed it for a number of computers, making the features "transportable". This means that whether you use an IBM, an Apple, or a TS2068, the commands will be identical. This saves a lot of time learning a whole set of new commands.

The only thing that I don't like about MSCRIPT is that you don't have the luxury of "what you see is what you get". With TASWORD TWO if you want to center a line of text, it appears centered on the screen. Not so with MSCRIPT. There are a jumble of commands in-

bedded in the text to do the job for you. However, if you use MSCRIPT a reasonable amount of time, this does not really seem a problem.

All in all, I find MSCRIPT a very well done program, and it deserves your attention.

TEXT EDITOR 2000  
\$6.00  
People's Software Supply  
609 E. N. 18th Street  
Abilene, TX 79601

This program is a fine example of what can be achieved if you can write only in BASIC. I have always believed that a fine program does not have to have Machine Code to work. The final result may be a little slower, but it will be a lot less complicated.

If you want to save even the \$6.00 price of TEXT EDITOR 2000, you can get it for FREE! Just type in the listing on pages 18 through 23 in Issue #13 of T-S HORIZONS. Chris Nystrom, the author of TEXT EDITOR 2000 was kind enough to provide us with the listing and instructions to print in the magazine!

(If you don't have a copy of Issue #13, order a back issue while you still can...it's going fast!)

TEXT EDITOR 2000 was written to use a 2040 printer, but probably can be modified to work with a full-size printer.

I commend Chris on the fine job he did with this program...WELL DONE!

Word 1.5  
N/A  
James Dupuy 6514 Bradley Avenue  
Parma, OH 441129

Word 1.5 is another Word-Processor written entirely in BASIC. James Dupuy wrote this program, and I first saw the listing in an issue of COMPUTER TRADER magazine. Dupuy is a regular contributor to TRADER, and he does a great job.

I recommend that you contact Dupuy about this program, even if you already have another Word-Processor. Just looking at his programming style is worth the cost of the program.

WORD-MOST \$19.95 Sharp's 107 Nine Mile Road Sandson, VA 23150	TEXIMAN \$24.95 T.E.J. Computer Products 859 N. Virgil Avenue Los Angeles, CA 90029
--	---

Both of these programs seemed to be too complicated to me to use regularly, but if used over a time probably would do alright.



Rick Duncan  
C/O T-S HORIZONS  
2002 Summit Street  
Portsmouth, OH 45662

Reduced to 80% original size:

Dear Rick:

Here is a sample textfile showing you the capabilities of this Word-Processing program I told you about over the phone. I love how it turns the print sideways so that you can get a full size 64-column format with a TS2040 Thermal Printer. You can get a 64-column printout with TROWORD TWO, but it is so small you need a magnifying glass to read it!

I hope that everything is going well for you & the family. Keep up th great work with T-S HORIZONS & let's keep T/S alive!

Sincerely,

Bill Ferretes  
MOUNTAINEER SOFTWARE

Both programs utilize a 32-column screen, which is alright if you are using a 2040 Thermal Printer. But if you are a full-size printer, the screen becomes cumbersome.

Also, the documentation for both programs seemed lacking. I feel that 50% of a program's worth is in the manual, especially if the program is to be used a great deal of time.

Again, I did not spend a great deal of time with these programs, but I feel that other programs fared better.

T5OWDS84B (!!!)  
\$12.50  
WIDJUP Company  
1120 Merrifield S.E.  
Grand Rapids, MI 49507

Just as I was getting ready to send the final draft of this review to the publisher, I received a package in the mail. What's this? WHAT?!!?

Yes, the name of this program IS T5OWDS84B. Don't ask me what it means, I haven't the foggiest.

But, WHAT A PROGRAM! T50 is designed to utilize the 2040 Thermal Printer in a very unique way. It turns your textfile SIDEWAYS to print a 64-column format. It prints 16 or 32 lines per segment (single or double spacing), and has a textfile size of 320 lines.

(An example of a printout is shown in figure 1.) All you do is print out the textfile, cut the segments apart, and tape them together to make full-size sheets.

Again, a programmer is only limited by his imagination!

If you do not have a full-size printer, then T50 is for you!

In closing, I hope this series has proven to you that the TS2068 is a terrific machine to use as a Word-Processor, and that many great programs are available for your use. Just pick the one that suits YOUR needs! TSH

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## SPECTRUM

Spectrum Program Reviews  
By Doug Gangl

Product: Beach-Head

Price: \$15.95

Available from: Curry Computer  
5344 W. Banff Lane  
Glendale, Az 85306

Beach-Head has been converted from the smash hit for the Commodore 64, and in fact, they did a pretty good job doing it! It is made by the same company that manufactures Zaxxon for the Spectrum. The game is packaged in a standard cassette case with a picture of the game on the front. It took me a few tries to get the game to load, but what I saw on the screen really blew my eyes out. It really does look like the C-64 version!!!

Beach-Head uses some type of a "fastload" and a very good copy protection. The loader program is the booter for the fastload. The header of the next segment is very choppy, and only when the computer has successfully loaded in the loader will it read the "choppy" header. Once the program gets going, it really goes fast. The loading lines around the border of the screen are very thin and the screen loaded up much faster than normal.

I have but one complaint for Beach-Head, and that is the sound. Having played the Commodore version, I was used to the spectacular sound of the airplane engines. But, in the Spectrum version, the sound is dull clicks instead of the "roar" as is in the C-64 version. Otherwise, the graphics are very good!

In Beach-Head, the object is to make it past the planes, boats, and land obstacles to reach the Final Battle. Here, there is a hill with a certain number of targets that light up and you must shoot them. But, a turret is on top of the hill and is constantly turning towards your tank. Once you have successfully hit 10 targets the enemy hill will explode, thus giving you a "Beach-Head". If you are not fast enough, the turret will blow your tank to pieces!

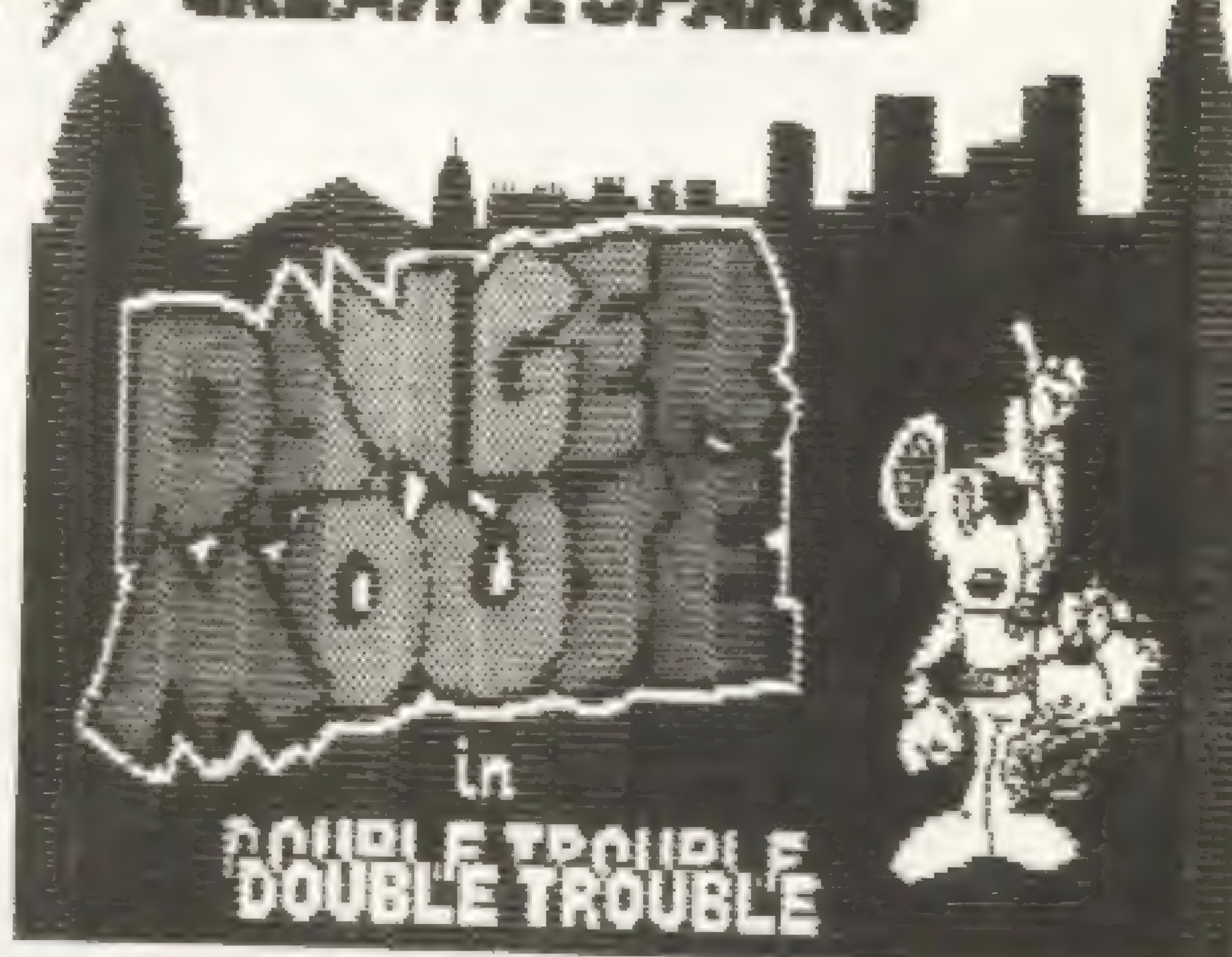
Beach-Head is a super game that really struts the graphic capabilities of the Spectrum. Now...all you owners of a 2068 + romswitch can have what your Commodore friends have, and for less money!!

Program: DANGERMUSE IN DOUBLE TROUBLE

Price: \$15.95

Available From: Micro Imports, LTD  
12416 North 28 Drive,  
Suite 18-251  
Phoenix, AZ 85029

## CREATIVE SPARKS



Now, here is a game that I was Really hoping for, being a Dangermouse fan. Dangermouse is a British cartoon that is on cable TV in Phoenix on Nicklodeon (other areas may also get the same channel). This program was packaged in a nice little plastic box with a very appealing cover.

A user must have some understanding of Dangermouse before this game would make sense at all. The documentation explains this somewhat, but having a background would help. There are three different scenarios, and each one is thoroughly explained in the documentation. Also included is a free poster offer of Dangermouse and his faithful companion Penfold (a Hamster).

The graphics of Dangermouse are outstanding. They almost look like they jumped out of the TV and onto the computer screen! Dangermouse has his patch on his eye and all, and Penfold also has his little hairs growing out of his little head!! It is really quite amazing how well the manufacturer made the graphics.

Now, for the disappointing part, the game itself. It is not very fun at all. It is quite easy and repetitious. I think Dangermouse was geared toward a younger audience. The only scenario that I even think is OK to play is the second one ("through the jungle")

Another drawback is that the player cannot redefine the keys to his liking. I find that the game keys are a little crunched for my liking.

A person who is not a Dangermouse fan would probably not like this game, and the only reason I could see a non-Dangermouse fan for buying the game would be for the graphics. A Dangermouse fan would really enjoy having the game in his collection. I just enjoy looking at the screens play by themselves. I think the \$15.95 is worth the price. It is a good program to show a friend.

TSH



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J. Trenbick

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—Fred Blechman, K6UGT

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I recently noted some requests from persons who are just beginning to use ZX81 or T/S 1000 computers. Not really so strange when one stops to think! ALL of those computers that "the experts" said would end up on closet shelves actually DID! But, AHHA! As those computers trickle back into the market via garage sales (usually at anywhere in the 5 to 15 buck range) more lucky people are enabled to join the ranks of dedicated fans!

These "newcomers" are twice lucky. THERE IS MORE SOFTWARE AT MORE REASONABLE PRICES AVAILABLE NOW THAN THERE WAS BEFORE TIMEX PULLED THE PLUG! Just retribution, I call it!

With the foregoing in mind, and the indulgence of the "old-timers", we now take a look at some useful software that has been with us for some time; some items that (usually) appeared on the drug store shelf along with what has become our favorite machine.

(All programs require 16K, and bear the TIMEX label)

#### THE HOME ASSET MANAGER Copyright Timex 1982

This program was developed to accomodate the average home-owners need to keep records of valued possessions. Each item may be entered along with date of purchase, serial number, location in the home, etc., etc., such information being extremely useful when filing insurance claims in case of theft, flood, or fire, etc. (You WILL save your Timex first, will you not?) The program is easy to use, and adequate operating instructions are provided.

#### THE COUPON MANAGER Copyright Timex 1982

The saving and redeeming of coupons has in many cases become a major factor in the family budget. This program is an organized filing system for such coupons, and may easily be utilized to maximize the benefits of the practice. Operating from a main menu, one assigns each coupon to one of 18 categories. This leads to a sub-menu where coupons and supplementary information such as brand name, effective dates, etc., may be added, deleted, and listed. The computer assigns a "control number" to the coupons which should be written on the coupon and physical file. The "data base" thus created is saved on tape. When a trip is planned, for example, one reloads the tape and examines the data to find and retrieve from storage those coupons appropriate to the shopping expedition at hand. Operating instructions are adequate for the first-time user. If one is into coupon saving, the program could prove quite valuable in a short time.

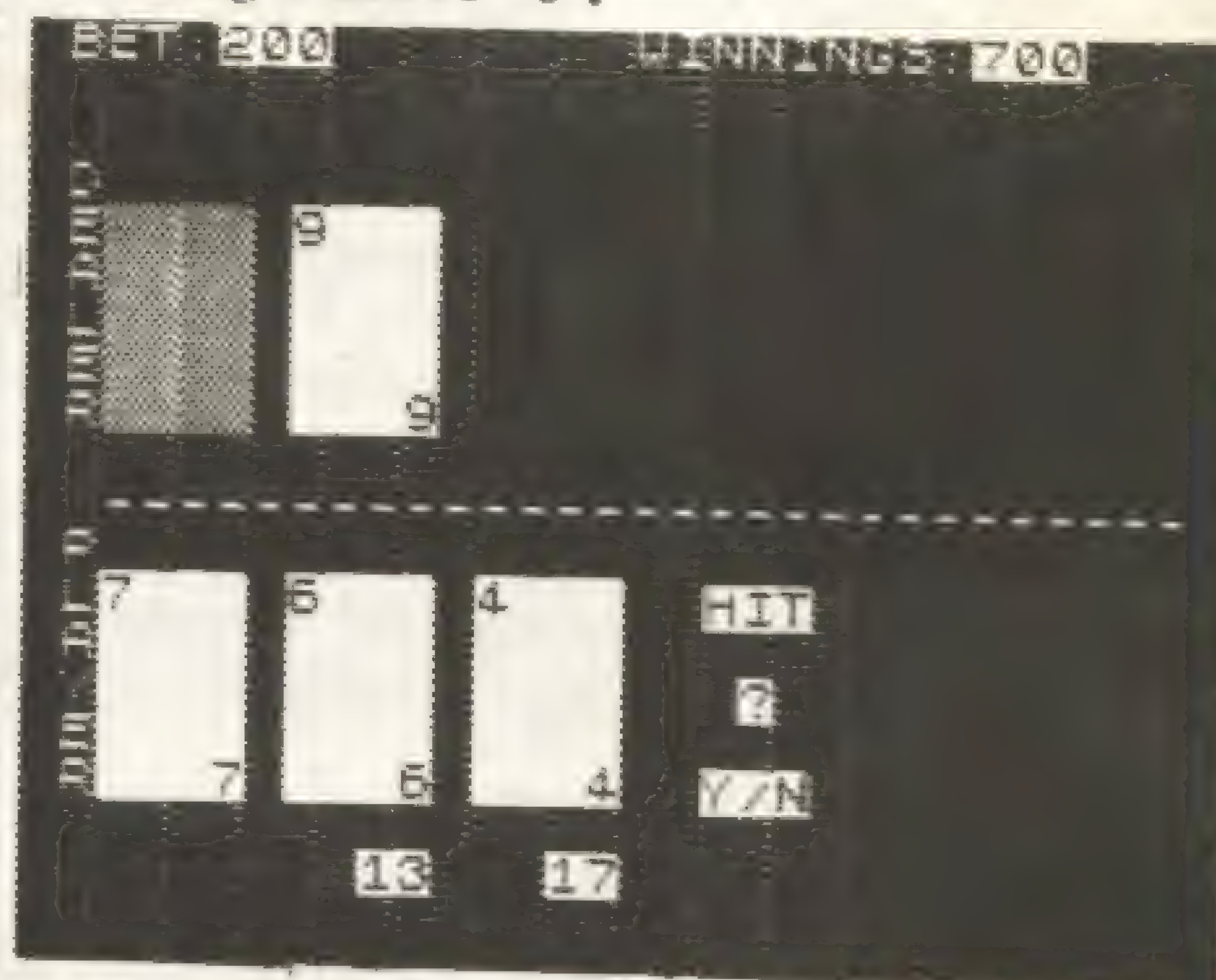
#### THE CHECKBOOK MANAGER Copyright John Heaney 1982

Sorry, I must pass on this one. I have tried three separate tapes, each from a different source and all brand new in original shrink-wrap, plus more than one computer/recorder combination. None has loaded successfully. As I have experienced very few loading problems with my machines, I can only conclude that some bad tapes were inadvertently released and I managed to find three of them. If you wish to try this program yourself, I recommend that you buy only if a money-back guarantee is part of the deal.

#### THE GAMBLER Copyright Timex 1982

This tape contains two "games of chance", "Blackjack" and "Slot Machine". Only one of the games may be loaded at a time. When "Blackjack" is loaded and RUN, you are asked to specify a minimum bet, whereupon a maximum bet is automatically set at 10 times the minimum bet specified. Game can be stopped by entering a bet of "0". Actually, this is a rather simplistic form of the old familiar game. No splitting pairs, no "Down for Double" or other fancy rules! On the other hand, the dedicated gambler would probably place his bets here rather than place no bets at all!

"Slot Machine" starts one off with a \$100 credit. Bets may be from a minimum of \$1 to whatever remains of the \$100 credit plus / minus winnings/losses. Game may be terminated entering a bet of "0".



#### SUPERMAZE Copyright Greg Harvey, 1982

Supermaze is a set of screens traversed by commands of "F" for "forward" and "R" and "L" for turns. It includes a "compass" option which will indicate which way the player is facing, optional "stones" to drop, optional



## A. Gindin

29



# T-S NEWS

ITEM: Ezra Group has a wide variety of software for the TS1000 and TS2068 at prices between \$1.95 and up. Send 22 cent stamp for free information, to Ezra Group, P.O. Box 5222, San Diego, CA 92105. Tell them what computer you have and that you heard of them through T-S Horizons.

ITEM: We just got a copy of "The 1985 Sinclair User Annual" from Curry Computer. The annual is published by Sinclair User, the British Magazine for the ZX81 and Spectrum. Chapter 1 is a comprehensive review of all the news for 1984 (though it barely mentions the Timex drop-out) including the QL story. Also contained are buyer's guides to joysticks (at least 13 are manufactured specifically for Sinclair machines, which do not have built-in joystick parts), add-on keyboards, and printers; the best and worst computer games; business software section; a machine code section; 25 pages of program printouts; and more. Some general impressions from the annual: The Spectrum is THE MOST popular home computer in the U.K., the main emphasis is on games, and there seems to be no great interest in disk drives for the Sinclair computer. The Annual is available from Curry Computer (5344 W. Banff LA., Glendale, AZ 85306) for \$7.95 while supplies last.

Item: The Timex Sinclair Amateur Radio Users Group is made up of computer users who are interested in putting their Timex or Sinclair computers to use in amateur radio operations. Most of the members are not computer experts; but they do have a good technical background in electronics, so they quickly learn quite a lot about their computers.

The journal of this group is called QZX, and the journal is the main benefit of membership. It is sent monthly by first class mail to all members. Membership costs \$12 per year (with a \$7 postage surcharge for members who live outside of the United States, Canada, and Mexico). The journal publishes complete programs and hardware projects submitted by members. The journal also publishes personal items about the members and information about operating events such as nets in which the members might be interested.

The group is a small but active collection of people who are working hard to expand the usefulness of their computers by writing programs and buying and inventing hardware additions. There are members in almost every state and in about 20 different countries.

Those who wish to join (and they need not be licensed amateurs) can do so by sending \$12 dues to Alex. F. Burr, K5XY; 2025 O'Donnell Drive; Las Cruces, NM 88001.



← Sinclair Simon  
of Sinclair User



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